evaKOOL™

Owner's Manual & WARRANTY

'RF MODEL'

POWERED BY Danfoss

AUSTRALIAN OWNED

AUSTRALIAN MADE
FROM IMPORTED
& LOCAL COMPONENTS

QUALITY & PERFORMANCE - THE LASTING IMPRESSION

Thank you for purchasing an EvaKool fridge freezer.

The unit you have chosen has been proudly designed and manufactured in Australia by Australians combining EvaKool's legendary insulated fibreglass cabinet with world renowned Danfoss compressor technology to produce Australia's most ingenious, versatile and user friendly 12V/24V fridge freezer combination.

We recommend that you carefully read this manual prior to operating your EveKool as it contains important information regarding your unit's operation, maintenance, care and terms of warranty.

This unit is designed to operate from either a 12V or 24V power source or from a 240V mains supply via an EvaKool approved 12v/24v adaptor.

It can also be operated in remote areas from solar and generator power sources.

Please refer to page ?? for instructions.

All EvaKool products are specifically designed to withstand Australia's harsh operating conditions and if treated with care will provide you with years of trouble free service.

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INSTALLATION

Your EvaKool fridge/freezer is designed to operate from either a 12V or 24V DC power source. It can also operate from a 240V (AC) main supply with the use of a 12V/24V adaptor.

When using solar power or power generators ensure that the fridge is connected through a 12V or 24V battery. We recommend the use of anti-surge devices when there is a possibility of 'spikes' from the power source.

The recommmended mannner to connect your fridge is illustrated below.

Please note: The fridge is set to cut off immediately when the voltage dips to 9.6V so as to protect your your battery. It wil start automatically when adequate power is restored.

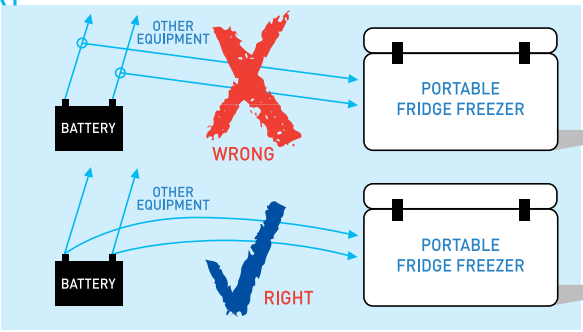
For maximum efficiency we recommend the fridge is installed on a level surface, although, if necessary it will operate on surfaces up to an angle of 30˚.

IMPORTANT - INTERNAL CIRCUITRY

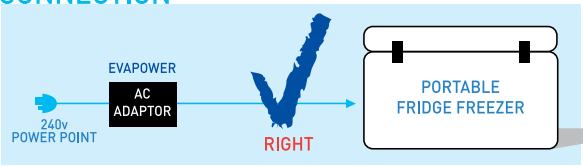
DO NOT block air flows to your fridge. Ventiliation is very important to ensure efficiency and reliability. Poor ventilation will cause the compressor to overheat and hence reduce its life span and efficiency.

ELECTRICAL CONNECTION - 12volt OR 24volt DC

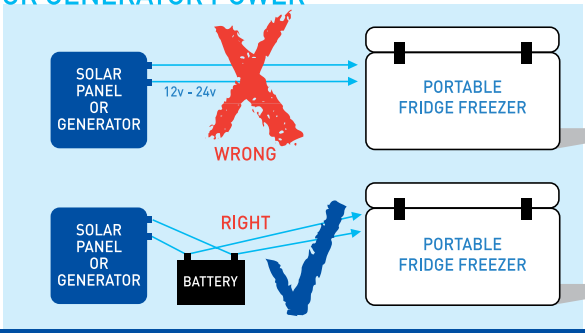
BATTERY



MAINS CONNECTION



SOLAR OR GENERATOR POWER



Operating INSTRUCTIONS

12 VOLT OPERATION

- Connect the military plug end of the fridge lead, supplied with the fridge to the fridge,
- Push cigarette lighter plug into 12V or 24V power outlet.

  Note: If using a plug other than the cigarette lighter plug, ensure that the polarity is correct ie: positive to positive and negative to negative.
- Turn the temperature control dial clockwise to turn the fridge on. The green power light will come on indicating the unit is receiving power.
- The compressor will start and about 2 seconds later the fan motor will start. Thereafter the red 'cycle' light will come on indicating the fridge is running and the evaporator plate inside the fridge will start to cool.
- Turn the temperature control dial to its coldest setting in order to cool the unit and its contents. Once the required temperature has been reached, set the dial at the desired temperature for either fridge of freezer operation.
- In order to save power, you may turn down the temperature settings or even switch the fridge off when it is not to be opened for lengthy periods, eg, overnight.

MAINS OPERATION

- The unit can also operate from a 240V mains power source via an EvaKool approved 12V/24V adaptor.
- Connect the military plug end of the adaptor to the fridge and plug the 3 pin plug into the mains.

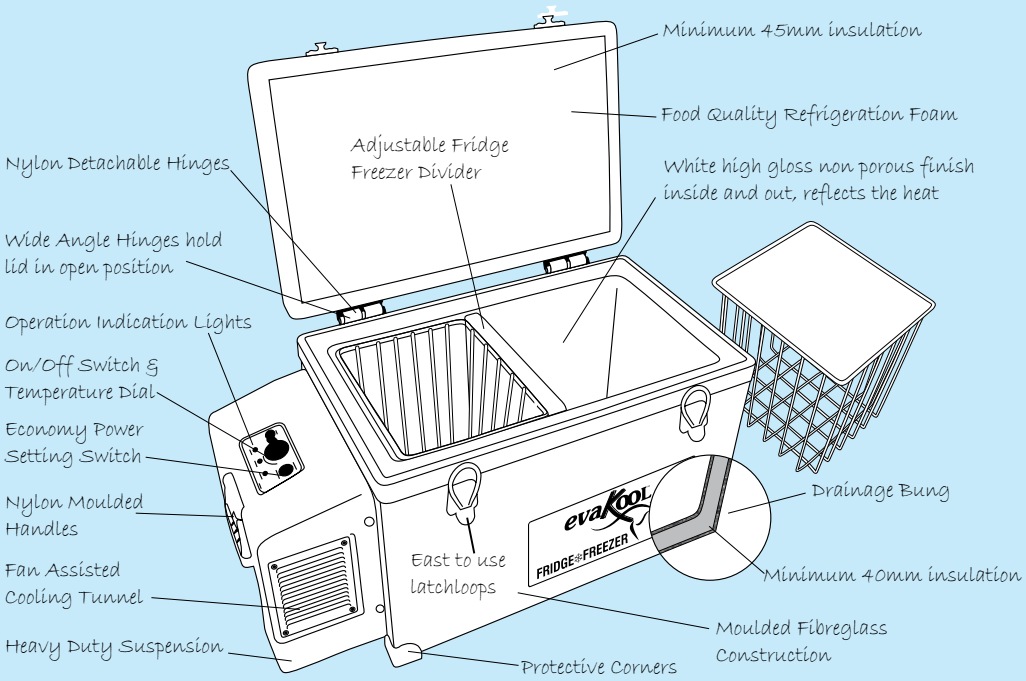
IMPORTANT NOTES

- **DO NOT** run your fridge near flames or sources of heat. Preferably keep it in a cool position away from direct sunlight.
- When travelling on rough roads, place about 50mm of high density foam under the fridge and secure the unit using tie-down straps through the handles.
- To assist in preventing the unit from reaching the low voltage threshold and automatically turning itself off the following should be remembered:
  - **DO NOT** leave the fridge running from the car battery (with engines not running) for extended periods.
  - Without the engine running all batteries will eventually discharge enough for the unit to switch itself off.
  - **TAKE CARE WITH** vehicles with older batteries or smaller vehicles with lower rated batteries.

Selection of FRIDGE/FREEZER OPTIONS

Your EvaKool fridge/freezer is uniquely designed to operate as a fridge or freezer or fridge/freezer combo.

- When you first start the fridge, remove the insulated internal divider which will allow the air to circulate and hence bring down the temperature in the cabinet quicker
- Once the temperature has reached the desired level - refit the divider between the baskets.
- To operate the entire unit as a fridge or as a freezer, remove the divider, slide the basket towards the freezer plates and insert the divider at the end of the cabinet. Note the recommended temperature control dial settings.
- To operate as a fridge/freezer combo the divider can remain between the baskets or by removing the fridge section basket can be moved withing the cabinet thereby altering the size of both the freezer and fridge compartments.



NORMAL OR ECONOMY OPERATION

Your EvaKool fridge is designed to operate in either normal or economy mode.

The normal/economy switch is used to change the speed and capacity of the compressor.

eg. In the economy mode the Danfoss BD35 compressor will operate at 2000rpm and is rated at 33 watts. In the normal mode it will operate at 3000rpm and is rated at 45 watts - a 36% increase in capacity.

SELECT

ECONOMY for daily use and optimum power useage and;

NORMAL for additional performance in temperatures over 30°C or when quick cooling is required.

* Compressor watts based on a BD35 compressor operating at -23.3°C evaporating temperatures

CONTROL PANEL

TEMPERATURE SETTINGS

- Turn temperature control dial clockwise to make the fridge colder and anti-clockwise for warmer.
- To turn the fridge off turn the dial fully in an anti-clockwise direction until it clicks into the 'OFF' position. This will cut the power to the compresssor but the green power light stay on as long as the unit is connected to a live power source.

As a general rule depending ontheambient temperature set the temperature control dial on:

- **1 to 3** to operate as a fridge.
- **4 to 6** to operate as fridge/freezer combo.
- **7** to make the unit operate as a freezer.

LED LIGHTS

YELLOW LED - Fault light

RED LED - Cycle light

GREEN LED - Power light (see fault finding guide)

POWER INLET

The military plug (power inlet socket) is notched so that it can only be connected in the correct way. The threaded ring locks locks the plug into place.

CIRCUIT BREAKER

Your EvaKool is fitted with a 15 amp circuit breaker.

The purpose of the circuit breaker is to protect the compressor should there be:

– a direct short to earth;

– a power surge or faulty power supply.

If either of the above occur the circuit breaker will 'trip' thereby cutting off all power to the unit.

As a result all the lights on the control panel will go out.

To reset simply push down the black button on the circuit breaker.

If after re-setting, the circuit breaker continues to trip, please contact Evakool or your service agent.

HELPFUL HINTS

- Pre-chill the fridge before use.
- On particularly hot days raise the insulated divider by +/-10mm to allow increased air circulation in the fridge cabinet.

For maximum efficiency:

- Regularly rotate contents of fridge particularly when operating as a freezer.
- Keep fridge as full as possible, ideally the freezer section to be at least 50% full.
- Use the baskets provided to ensure air circulates freely in the cabinet (the baskets also protect the cooling plate from potential damage).
- Keep the cover on the freezer section.
- Refrain from the unnecessary opening of the fridge.
- ensure the air vents are not obstructed so as to allow maximum air flow.
- Avoid placing hot or warm goods in the freezer.

Care & STORAGE

DEFROSTING

- Switch off freezer and open lid.
- Open drainage bung to drain waste as fridge defrosts.
- A jug of water may be poured over the evaporator plates and inside of the cabinet to assist cleaning. (DO NOT FLOOD OR FILL THE CABINET WITH WATER.)
- **DO NOT** use sharp objects when cleaning and defrosting your EvaKool. Keep your EvaKool clean by wiping both the interior and exterior with a damp cloth using a mild non-abrasive household detergent and dry thoroughly.
- Ensure fridge is completely defrosted and dry before turning back on.
- Always clean the fridge afte use and before storage.

STORAGE

- When storing your EvaKool for any lengthy period prop the lid open a few millimetres and remove bung cap to prevent the build-up of mould or odours. Spray interior, if necessary, with a food grade anti-mould/odour product.
- We recommend that your fridge is operated at regular intervals if it is being stored for any length of time. Remember your EvaKool can be used in the home as an additional fridge or freezer by using your EvaPower AC adaptor. (see page ??)

WARNING

Do not place your AC adaptor or any electrical equipment inside your fridge as condensation and moisture will cause the electronics to fuse or burn out, voiding the warranty.

PREVENTATIVE MAINTENANCE

As your EvaKool is a portable unit it is likely to be subjected to a variety of different operating conditions.

Accordingly in terms of our warranty you are obliged to have the unit regularly inspected by an approved EvaKool service agent. See warranty statement.

Prior to commencing any maintenance ensure the unitis not operating and is disconnected from a power source.

The unit is designed so preventative maintenance is easy for the owner to undertake.

Simply remove the 6 screws holding the compressor cover in place, drop the cover forward and using a small brush, vacuum or compressed air, clean any dust or dirt fro the condenser coils.

DO NOT USE WATER TO CLEAN THE CONDENSER COILS. FAILURE TO REGULARLY CLEAN THE COILS MAY VOID THE WARRANTY.

If the unit is exposed to rain or water, remove the cover and dry as necessary. If regularly exposed to moisture spray the compressor, condenser etc with a protective product such as LANOGARD or WD40 at least every 3 months.

Fault Finding GUIDE

refer to the TROUBLE SHOOTING FLOW CHART

FRIDGE NOT RUNNING?

Is the RED light on?

- Check power supply.
- Check that the fridge lead is plugged in properly, and that no wires are loose.
- Check that the temperature dial is not in the 'OFF' position.
- Check the circuit breaker and press to re-set if necessary.
- Try starting in economy and normal positions.
- If the red light is on and the fridge is still not running call our Service Department on 07 5492 7777.

FRIDGE RUNNING BUT NOT COOLING?

- Is the yellow light flashing? If yes, refer self diagnostic system below.
- Make sure that the compressor is running and not just the fan motor.
- If the compressor is running and the fridge is not cooling call our Service Department on 07 5492 7777.

FRIDGE IS TRYING TO START BUT KEEPS CUTTING OUT?

- Is the yellow light flashing? - Refer self diagnostic system below.
- Low voltage. Check your supply.
- Voltage drops. Read section on voltage drop.

YELLOW LIGHT FLASHING?

The Danfoss compressor has its own self diagnostic system, if the yellow light is flashing, count how many flashes in each set. It will flash a series of between 1 and five flashes every four seconds.

1 Flash **The fridge is cutting out because the supply voltage is outside the cutout setting.**

- Check your power supply (fridge power lead and vehicle wiring) for voltage drop.

2 Flashes **Condenser fan problem. Contact Service Agent.**

3 Flashes **Blocked rotor or the differential pressure in the system is too high. Contact Service Agent.**

4 Flashes **If the system is too heavily loaded the motor cannot maintain speed. Contact Service Agent.**

5 Flashes **The compressor is cutting out on its thermal protection.**

- Ambient temperature is too high
- Condenser fan motor failed
- Condenser coil is blocked with dirt and fluff
- Air vents on the side of the unit are blocked

The condensing coil in your refrigerator is like a radiator in your car. If the fan that is cooling it stops, or the fins in the coil get blocked with dirt and fluff, the compressor will overheat and cut out on its thermostat protection.

SIMPLE TESTS

- **Fridge does not operate in your vehicle:**
  Run the fridge from a 240 volt power source via an AC adaptor. If the fridge starts and runs then the problem is with your vehicle, either the battery or the wiring.
  See section on voltage drop (AC adaptor, minimum of 10 amps at 12 volts peak or 5 amps at 24 volts peak).
  NOTE: The EvaKool AC adaptor model EP24 delivers 24 volts.

- **Fridge does not operate from a 240 volt power source when using an AC adaptor:**
  Run the fridge from your vehicle or other fully charged 12 volt battery source. If the fridge starts and runs, then the problem is with the AC adaptor or fridge lead.

- **NOTE:** It is important to ensure in all cases that the voltage at the end of lead connecting to the fridge is adequate. ie: above 11.0 volts.

Voltage Drop & WIRING REQUIREMENTS

VOLTAGE DROP

The majority of our customer inquiries are related to voltage drop, which means the power to run the fridge is lost between the power supply (the battery) and the fridge compressor. The Danfoss compressor requires over 10.4 volts (12 volt) and 22.8 volts (24 volt) to operate. If the voltage drops to these points or below, the fridge will default, you will hear the compressor trying to start every minute or so.

WHEN VOLTAGE DROPS OCCUR:

(a) The cigarette lighter socket in your car or 4WD will have on average 3mm wiring. This wiring is too thin and will drop voltage from one end to the other. Danfoss recommend a minimum of 6mm auto cable and if the distance from the power source is over 6 metres, 10mm wiring is required. Consult an auto electrician should you need to upgrade.

(b) Check for dirty or loose connections at the battery and outlet.

(c) Are there any relays or after market voltage protection devices in the line to your fridge. These also have voltage drops through them.

(d) Check that your battery doesn't drop voltage under load.

Warranty Statement
TERMS & CONDITIONS

Nexberg Pty. Ltd. trading as EvaKool undertakes to the original purchaser that this product is sold free of defect in materials and/or workmanship under normal use for a period of 5 years subject to the following: EvaKool will repair free of charge or replace at their discretion your EvaKool fridge/freezer if the unit's failure is as a direct result of faulty workmanship and/or materials.

- As this is a portable unit subject to a variety of different operating conditions the purchaser is obliged under this warranty to have the unit regularly inspected by an approved EvaKool service agent, as prescribed in the attached service record. The first inspection must be undertaken 24 months from date of purchase and repeated every 12 months thereafter. The annual inspection should take not more than 30 minutes and will help ensure that your EvaKool is maintained in peak condition. Please note that the cost of this inspection is for the owners's account. Failure to have the unit inspected will limit the warranty to 24 months from date of purchase. Please ensure the service card is kept in a safe place as it will need to be submitted in the event of a warranty claim after 24 months.

- As your EvaKool is a handcrafted product there may be slight differences between units. These differences do not constitute a claim under the terms of this warranty.

- The warranty period commences from the date of purchase by the original purchaser from an authorised EvaKool dealer.

- Please note the beneficiary of this warranty is the unit's original purchaser.

- EvaKool will honour this warranty on presentation of proof of purchase of the unit to EvaKool or its approved service agent. The service agent must be provided with a photocopy of the proof of purchase to obtain approval to proceed prior to warranty being honoured.

- Please telephone (07) 5492 7777 for the name of an authorised service agent or refer to list provided and for a warranty authorisation number prior to any work that may be claimed under warranty being undertaken. It is the purchaser's responsibility to freight the unit to and from the service agent indicated by EvaKool.

- EvaKool will not be held responsible for any damage or loss suffered or cost incurred whilst in transit.

- Warranty repairs may only be carried out by an authorised service agent. EvaKool will not reimburse repair claims carried out by unauthorised service agents. Any tampering with any part of the unit by an unauthorised service agent will automatically void the warranty.

- Service agents may charge a fee for viewing or testing the unit. This is not covered by EvaKool or this warranty and is payable at the service point unless authorised by EvaKool.

- EvaKool will not accept a warranty claim if:

  1. Modifications have been carried out to the unit without EvaKool's written authority.
  2. Damage to or failure of the unit has been caused in EvaKool's opinion by incorrect, extreme or unreasonable use.
  3. Damage to or failure of the unit has been caused in EvaKool's opinion by misuse, neglect, accident, impact or similar cause. Refer the preventative maintenance guidelines.

- EvaKool will not accept any claims for consequential loss of any nature whatsoever arising from the malfunction or stoppage of this unit.

- EvaKool has total discretion on the variation of the warranty terms.

- This warranty cannot be varied by others.

COMPLETE THE ENCLOSED WARRANTY CARD AND RETURN WITHIN THIRTY (30) DAYS OF PURCHASE.

Service Record

Fridge/Freezer

As your EvaKool is a portable unit subject to a variety of different operating conditions the purchaser is obliged under this warranty to have the unit regularly inspected by an approved EvaKool service agent. This annual inspection should take no more than 30 minutes and will help ensure that your EvaKool is maintained in peak condition.

Please note the cost of this inspection is for the owner's account. Please ensure that this service card is kept in a safe place as it will need to be submitted in the event of a warranty claim after 24 months.

Model: ..... Serial Number: .....

Date of Purchase: ..... Owner's Name: .....

Address: .....

Tel. No.: .....

Service Procedure

TO BE ✓ AS COMPLETED

Service Period

Service Procedure	24 MTHS	36 MTHS	48 MTHS	60 MTHS
1. Remove compressor cover				
2. Clean condenser coil and fan				
3. Carry out visual inspection:				
• check wiring and connectors				
• ensure pipes not rubbing				
• check evaporative plate for rubbing and cut marks				
• check hinges, latches and cabinet				
• check lid seal				
• if cabinet fitted with drain, check drain plug cap is on and tight				
• check lead, spring tension, and any damage to lead and plug				
4. Test run unit				
• check fan				
• amp draw of unit				
5. Re-fit compressor cover				
• test run unit to ensure no loose wires after fitting of cover				
Date of inspection				
Service Agent				
Name				
Address				
.....				
.....				
Telephone No.:				
Service Agent's signature:				

FOLD AND SEAL

WARRANTY CARD

MODEL:.....SERIAL No.: .....

DATE OF PURCHASE:.....INVOICE No.: .....

PURCHASED FROM:.....

PURCHASER'S NAME:.....

ADDRESS: .....POSTCODE: .....

.....

PHONE No:.....FAX No.:.....

RETAIN FOR YOUR RECORDS

WARRANTY CARD

MODEL:.....SERIAL No.: .....

DATE OF PURCHASE:.....INVOICE No.: .....

PURCHASED FROM:.....

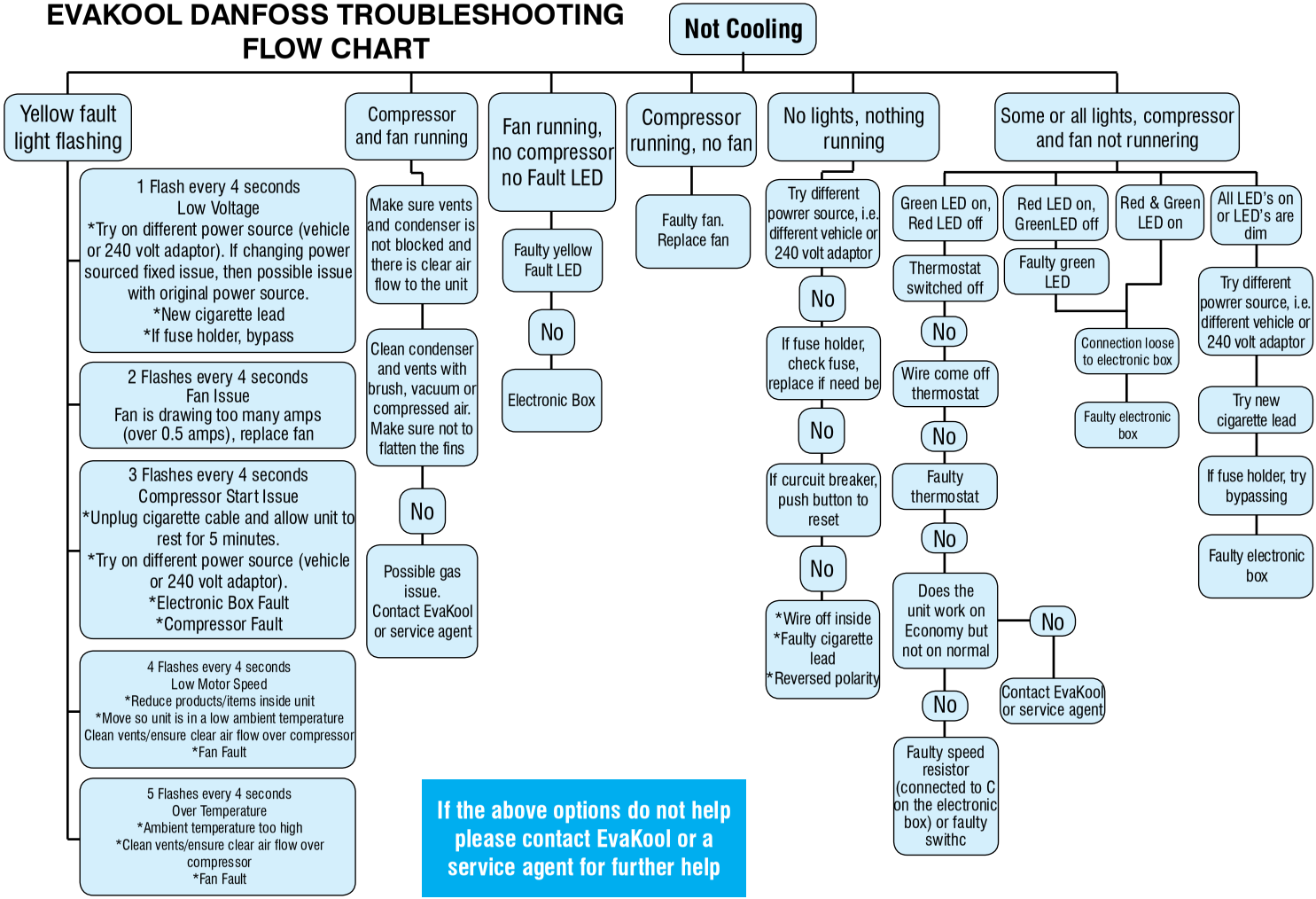
PURCHASER'S NAME:.....

ADDRESS: .....POSTCODE: .....

.....

PHONE No:.....FAX No.:.....

EVAKOOL DANFOSS TROUBLESHOOTING FLOW CHART


Not Cooling
Yellow fault light flashing
1 Flash every 4 seconds
Low Voltage
*Try on different power source (vehicle or 240 volt adaptor). If changing power sourced fixed issue, then possible issue with original power source.
*New cigarette lead
*If fuse holder, bypass
2 Flashes every 4 seconds
Fan Issue
Fan is drawing too many amps (over 0.5 amps), replace fan
3 Flashes every 4 seconds
Compressor Start Issue
*Unplug cigarette cable and allow unit to rest for 5 minutes.
*Try on different power source (vehicle or 240 volt adaptor).
*Electronic Box Fault
*Compressor Fault
4 Flashes every 4 seconds
Low Motor Speed
*Reduce products/items inside unit
*Move so unit is in a low ambient temperature
Clean vents/ensure clear air flow over compressor
*Fan Fault
5 Flashes every 4 seconds
Over Temperature
*Ambient temperature too high
*Clean vents/ensure clear air flow over compressor
*Fan Fault
Compressor and fan running
Make sure vents and condenser is not blocked and there is clear air flow to the unit
Clean condenser and vents with brush, vacuum or compressed air. Make sure not to flatten the fins
No
Possible gas issue. Contact EvaKool or service agent
Fan running, no compressor no Fault LED
Faulty yellow Fault LED
No
Electronic Box
Compressor running, no fan
Faulty fan. Replace fan
No lights, nothing running
Try different powrer source, i.e. different vehicle or 240 volt adaptor
No
If fuse holder, check fuse, replace if need be
No
If curcuit breaker, push button to reset
No
*Wire off inside
*Faulty cigarette lead
*Reversed polarity
Some or all lights, compressor and fan not runnering
Green LED on, Red LED off
Thermostat switched off
No
Wire come off thermostat
No
Faulty thermostat
No
Does the unit work on Economy but not on normal
No
Contact EvaKool or service agent
No
Faulty speed resistor (connected to C on the electronic box) or faulty swithc
Red LED on, GreenLED off
Faulty green LED
Red & Green LED on
Connection loose to electronic box
Faulty electronic box
All LED's on or LED's are dim
Try different powrer source, i.e. different vehicle or 240 volt adaptor
Try new cigarette lead
If fuse holder, try bypassing
Faulty electronic box
If the above options do not help please contact EvaKool or a service agent for further help